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Risk Behavior of Customers in Centers for Free Voluntary HIV Counselling and Testing in Two Croatian Cities – Osijek and Zadar

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A B S T R A C T

The primary goal of this research is to compare risks and occurrence of HIV infection in Osijek-Baranja and Zadar County. Several chosen socioeconomic factors controlled by sex and age were investigated including level of education, employment and marital status of the free-of charge voluntary counseling and testing center (VCT) customers in the towns of Osijek and Zadar and their risk behaviors for acquiring HIV. Bivariate analysis of the differences between the customers from Osijek and Zadar showed statistically significant differences in the following variables: gender, education, number of VCT clients who use intravenous drugs (IDU), promiscuous behavior, number of homosexual clients, mode of receiving information on the VCT services, marital and partnership status, having children, inclination towards homosexual and bisexual relations, the main reasons for not using condoms, injecting drugs (IDU) needle sharing and the occurrence of hepatitis C. The analysis showed that significantly more males were counseled and tested in the city of Osijek, significantly less hepatitis C positive persons and promiscuity among all behavioral risk factors more often. A higher number of the customers of the VCT in the city of Osijek were »in permanent« relationship. Strategic management of health and health care, methods of comparing regional and national standardized indicators can provide valuable information about setting the focus, choosing priorities and establishing a good economic policy at the micro level. This study clearly established the dimensions of problems in HIV/AIDS prevention onto which it should be influenced through regional and local measures and actions. The indexes measured indicate which special initiatives and programs should be focused and set up as priorities in particular regions. The determined differences point to the need for a regional approach to HIV/AIDS prevention in purpose of improving preventive activities according to most common risk behaviors. Even though Croatia is a relatively small country, it has many regional and local features which need to be taken into consideration when developing prevention programs and activities.

Key words: *HIV, behavioral risk factors, level of education, regional differences, gender, intravenous drug users*

Introduction

Recent estimates showed that Eastern Europe had the highest HIV incidence increase in whole European region[1]. Social and political surrounding was a sort of risk precondition for HIV/AIDS incidence increase. After EU admission, a significant number of young seropositive intravenous drug users (IDU-s) from Eastern Europe migrates to other countries and could contribute to disease spreading in other parts of Europe. Extremely high risk is expected around migrant IDU-s with homosexual and/or bisexual behavior inclination[2].

Croatia has a very low prevalence of HIV infection and AIDS (less than 1 seropositive per 10,000 citizens)[3].

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However, as a part of the Western Balkans, Croatia experienced long period of political turmoil, wars and economic crises. Those hard times activated more frequent drugs misuse in the population, prostitution and other risk behavior for acquiring sexually transmitted diseases (STD-s) and HIV/AIDS as well[4]. Furthermore, Croatia's economy has been based on strong tourism sector with its own risks. Unlike other Southern European countries (Italy and Spain) with highest share of infected persons among IDU-s, in Croatia MSM population has been mostly represented[5].

A good public health approach to HIV prevention is the free-of-charge voluntary counseling and testing system in specialized centers (VCT-s). Protective behavior counseling and education as the VCT's main goal showed positive effects on individual and population level as well[6]. Osijek and Zadar were chosen as research settings because one represents continental and the other coastal part of Croatia.

VCT clients in Croatia are mostly members of the »hard to reach« populations: men who have sex with men (MSM), commercial sex workers (CSW), injecting drug users (IDU) and others, that were very scarcely described in scientific literature so far. Investigating such populations always had some limitations in acquiring representativeness. In our study the sample included all adult subjects and willing to participate (convenient sample).

The Aim of the Study

The aim of this study is to assess differences in HIV risks and other characteristics of clients in two VCT-s in the city of Osijek and the city of Zadar, and therefore contribute to HIV/AIDS prevention strategy quality in Croatia.

The city of Osijek is located in the northeast part of Croatian country, near the Republic of Hungary and the Republic of Serbia border, so that its traffic in the position is of great significance in linking Republic of Croatia with the European Union and Eastern Europe. Osijek is one of the oldest and the third largest city in Croatia with 114,031 citizens. In total 48% male and 52% female population. The city of Osijek records a negative natural growth as of past few years. Vital index is 77.1%. If this trend continues, it is completely predictable for the reduction of the number of young population in the city of Osijek.

The city of Zadar, nearly 3000 years old, is one of the oldest and the third largest city on the Adriatic coast. Through the city of Zadar passes the Adriatic tourist road, the route of the highway Zagreb – Split, and the railway line Zagreb – Knin – Split. The great significance of this position is linking the northern and southern part of the Croatia. 72,718 people live in the city of Zadar and in total 48% are male and 52% female population.

Material and Methods

Information was gathered through special questionnaire created by the Global fond and routinely used in VCT centers. Information was anonymously taken, and questionnaire was filled by counselors (VCT employees). Blood samples were taken from all subjects on a voluntary basis for HIV testing purposes. Fourth generation screening ELFA test was performed on every sample, and in case of positive results Western-Blot test was performed for confirmation[7,8].

Variables taken into consideration included: gender, age, level of education, employment, dwelling abroad, marital status, relationship status, sexual orientation, last year sex partners number and gender, promiscuous behavior (sexual intercourse with multiple partners outside of the three permanent link), condom usage, commercial sex work, IDU needle sharing, tattooing and piercing, having STD-s (hepatitis B, hepatitis C, gonorrhea, syphilis, genital herpes and HPV), HIV testing experience and blood donations.

Statistical analysis

Between groups differences were tested using χ^2–test, and statistical significance was accepted at the level $p<0.05$. Relationship of presence of individual HIV risk factors with the level of education, gender, age and employment status was tested in two cities – Osijek and Zadar. Furthermore, logistic regression was performed and the strength of association was expressed through adjusted OR-s with 95% CI-s. Series of bivariate logistic regression models were performed before making decision on plausible multivariate logistic regression model ($\alpha=0.05$).

Results

The entire sample consisted of 528 subjects. In the City of Osijek 201 male subjects with mean age 35.5±14.1 years (72%) and 80 female subjects with mean age 31.8±9.7 years (28%); In Zadar City 156 male subjects with mean age 34.6±11.5 years (63%) and 91 female subjects with mean age 31.0±10.4 years (37%).

In the City of Osijek clients were significantly older than in the city of Zadar ($\chi^2=17.19$, df=7, $p=0.016$), especially when looking males alone ($\chi^2=17.43$, df=7,

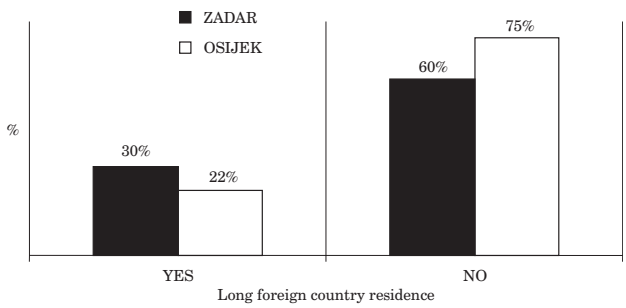

Fig. 1. Promiscuous behavior by long foreign country residence.

p=17.430). There was a significant difference in living conditions between Osijek and Zadar in total (χ^2=42.37, df=2, p<0.001), and for males (χ^2=30.04, df=2, p<0.001), and for females (χ^2=12.45, df=2, p=0.002). There was a significant difference between two cities by clients' level of education (χ^2=8.139, df=3, p=0.043). There were significantly less married clients in the city of Osijek (all 14%, males 15%, females 11%) than in the city of Zadar (all 27%, males 28%, females 25%) (χ^2=8.88, df=1, p< 0.001). Heterosexual orientation was most frequent in both cities, but significantly less in Osijek (84%) than in Zadar (97%) (χ^2=11.74, df=1, p<0.001). Therefore, declared homosexual clients were significantly more represented in Osijek than in Zadar, 9% and 1%, respectively (χ^2=16.09, df=1, p<0.001), similarly as declared bisexual clients, 7% and 3%, respectively (χ^2=4.55, df=1, p=0.019). In the city of Osijek homosexual orientation was more common among males (12%) than among females (χ^2=6.80, df=1, p=0.005). Intravenous drug use (ID use) as HIV risk factor was significantly more often reported in Zadar (χ^2=9.37, df=1, p=0.048), which was even more expressed in males (Zadar 42% and Osijek 26%) (χ^2=9.34, df=1, p=0.002). Promiscuous behavior was more often reported in Osijek (14%) than in Zadar (7%) (χ^2=5.80, df=1, p=0.016), and promiscuous behavior in these two cities had different association patterns with the level of education (χ^2=25.48, df=2, p<0.001). Furthermore, promiscuous behavior was more often expressed in clients from Zadar who had longer dwelt abroad (χ^2=12.87, df=1, p=0.003) (Figure 1). Heterosexual intercourse without protection (condom) was similarly reported in both cities (Osijek 81% and Zadar 80%). In Osijek, female clients used to have more unprotected intercourses (90%) than males (78%) (χ^2=4.96, df=1, p=0.017). When stratified by marital status the biggest share of clients who used to practice unsafe heterosexual intercourses was among married persons, and differences between the two cities were significant (Osijek 15% and Zadar 27%) (χ^2=9.31, df=1, p=0.002). More clients stated never using condoms in Zadar (39%) than in Osijek (27%) (χ^2=4.91, df=1, p=0.021).

Using bivariate logistic regression analysis we found differences between Osijek and Zadar (p<0.05) by these variables of interest: gender, level of education, marital and intimate status, ID use, promiscuous behavior, homosexual orientation and mode of receiving information on the VCT services, as well as by having children, inclination towards homosexual and bisexual relations, the main reasons for not using condom, needle sharing, hepatitis C and tattooing and piercing. Multiple logistic regression showed that being an Osijek VCT customer when compared to Zadar customers was stronger associated with male gender (OR=1.63; CI 1.06–2.53), being in long term relationship (OR=2.19; CI=1.18–4.08), being divorced (OR=3.83; CI=1.23–9.55), having promiscuous behavior (OR=2.12; CI=1.04–4.34), homosexual orientation (OR=10.58; CI=2.36–47.37) and bisexual orientation (OR=3.43; CI=1.23–9.55).

Discussion

The greatest share of VCT clients in both cities constituted of urban population members. In relatively big cities fear of labeling persons who visit VCT were less expressed and knowledge on risk behaviors were probably better than in rural areas. There were significantly more highly educated clients in Osijek than in Zadar. Customers with low or no education were very weakly covered by counseling which was the main weakness and space for further improvement of all VCT-s in Croatia[12]. There were more persons living alone in Osijek (all 45%, males 50% and females 31%) than in Zadar (all 39%, males 41% and females 36%).

ID dependence is one of the most important HIV risk factors. Most IDU-s came from urban areas and majority of them were unemployed. Socio-demographic and behavioral HIV and other STDs risk factors most prevalent among ID users include unemployment, alcohol misuse and not using condoms[13].

Number of sexual partners is one of the most important HIV risk factors recently in Croatia. Today we know more than 25 ulcerous and non-ulcerous STD-s that increase risks for HIV infection through increased excretion of viruses by infected persons[14,15]. Mentioned diseases result very often in damaging epithelial barrier of the skin and mucosa and/or increase HIV secretion in genital liquids[16,17].

Promiscuous behavior of clients in Zadar was more often among persons who dwelt abroad for a long time period. The main reasons for this were most probably due to higher share of migrant workers among them, sailors in particular. Emotions such as loneliness and other in cases when a man is separated from his family or partner while working abroad can influence risk behavior and therefore increase risk for HIV transmission[18,19]. This statement fits in evidence that migrant workers more often use to practice risky behaviors such as intercourse with CSW-s, intercourse with other men due to long isolation (esc. on a ship) and intercourses with unknown persons[20,21].

Homosexual relationships were reported in Osijek in 12% of customers, and in Zadar only in 2% of customers. This implies that in both counseling centers (but much more expressed in Zadar) MSM hardly show up or are unwilling to disclose this information. Therefore, one of the main goals in HIV prevention programs is to eliminate the stigma and discrimination of these persons that made them hidden and hard to reach. This way counseling and testing coverage of this population is expected to be improved in order to lower HIV incidence rates[5,22].

Association of living in rural areas with poorer knowledge on HIV protection and with less frequent condom use has been documented[23,24]. Even high educated persons living in rural areas showed less knowledge on safe sex and HIV protection[25,26]. Furthermore, HIV incidence in rural MSM populations around the world rises. Therefore, preventive activities should be shifted towards rural areas and adjusted to their specific needs.

Older MSM persons are very often married, and hard to reach for testing, counseling and study purposes because of anonymity and marriage protection. Recent studies showed that this is the bridging population for transmitting HIV from MSM to heterosexual women. They very rarely use protection in intercourses with their wives and neglect MSM experience or any other risk for HIV infection[27,28].

The most frequent HIV risk factor reported in both cities was heterosexual intercourse without protection (condom). Main opponents of condom use for HIV protection are religious groups and the Catholic Church[29,30]. Croatia has majority of officially declared Catholics which complicates sexual education of younger persons and general population because of conflict of authority[31].

One of the main limitations of this study is including only VCT customers in the sample, which is very often the case in hard to reach populations. VCT centers play a great role in society influencing risk behavior decrease in population, but still there is space for improvement[32]. It is extremely important to continue with work providing support to the newly infected persons as well and to inform them how improve quality of life with the infection and to protect their own and their partners' health[33].

Conclusions

VCT customers in Osijek were older than those in Zadar, especially when taking into consideration only men. The customers in Zadar were more often married, and less of them stated homosexual orientation. HIV risk factors and ID use were more frequent in Zadar as well as promiscuous behavior among persons who dwelt abroad for longer periods of time.

Strategic management of health and health care, methods of comparing regional and national standardized indicators can provide valuable information about setting the focus, choosing priorities and establishing a good economic policy at the micro level. This study clearly established the dimensions of problems in HIV/AIDS prevention onto which it should be influenced through regional and local measures and actions. The indexes measured indicate which special initiatives and programs should be focused and set up as priorities in particular regions. Although Croatia is a relatively small country, there is much regional and local specificity that need to be respected while implementing national preventive programs.

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RIZIČNI FAKTORI U KORISNIKA CENTARA ZA BESPLATNO DOBROVOLJNO SAVJETOVANJE I TESTIRANJE U OSIJEKU I ZADRU

S A Ž E T A K

Cilj ovog istraživanja je usporediti rizik i pojavu HIV infekcije u Osječko-baranjskoj i Zadarskoj županiji. Za analizu su, uz spol i dob, korišteni socioekonomski pokazatelji (nivo obrazovanja, zaposlenost, bračno stanje) i ponašajni rizici. Korišteni su podaci dobiveni iz anketnih upitnika Centra za dobrovoljno savjetovanje i testiranje u Osijeku i Zadru. Bivarijantna analiza je pokazala statistički značajne razlike prema spolu, stupnju edukacije, upotrebi psihoaktivnih supstanci, promiskuitetnom ponašanju, spolnom opredjeljenju (homoseksualizam), načinu primanja informacija iz Centra za savjetovanje i testiranje, bračnom i partnerskom statusu, sklonosti bi- i homoseksualnim odnosima, upotrebi prezervativa, te korištenju psihoaktivnih supstanci koje se injiciraju intravenski. Analiza je pokazala da je u Osijeku savjetovano i testirano značajno više muškaraca, da je značajno manje osoba pozitivnih na hepatitis C, te da je značajno učestalije promiskuitetno oponašanje. Veći broj osoba testiranih u Osijeku je bilo u stalnoj vezi. Za strateški menadžment zdravlja i zdravstva, metoda usporedbe regionalnih i državnih standardiziranih pokazatelja može dati vrijedne informacije o postavljanju težišta, odabiru prioriteta i uspostavi dobre »makropolitike na mikrorazini«. Ovim istraživanjem jasno i utemeljeno su utvrđene dimenzije problema prevencije HIV/AIDS bolesti na koje treba utjecati regionalnim i lokalnim mjerama i akcijama. Izmjereni indeksi ukazuju na to koje posebne inicijative i programe treba usmjeriti i postaviti kao prioritete u pojedinim regijama. Iako relativno mala zemlja, Hrvatska ima puno regionalnih i lokalnih posebitosti koje treba uvažavati kod razvijanja pojedinih preventivnih programa i aktivnosti.